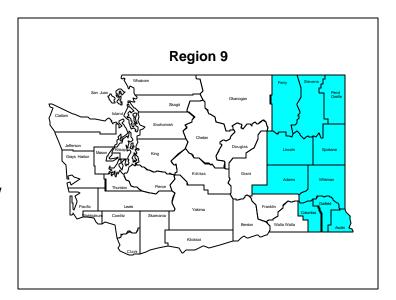
Region 9 includes the eastern-most counties of Washington State: Adams, Asotin, Columbia, Ferry, Garfield, Lincoln, Pend Oreille, Spokane, Stevens and Whitman.

The terrain varies from the Selkirk Mountains in the north to the rolling hills of the Palouse and the Blue Mountains in the south. The Columbia and Snake Rivers meander through the region. The semi-arid climate and fertile soil makes the region the

top grain-producing region in the state and one of the top in the nation.

The region's character is rural; it includes counties with some of the smallest and least-dense populations in the state. Region 9 grew more slowly than the state during the 1990s, although Pend Oreille and Stevens Counties grew much faster. The region is less diverse than the state as a whole; however, nearly half of the Adams County population is of Hispanic origin, and nearly one in five Ferry County residents is Native American.



Agriculture, manufacturing, trade and government are the primary sectors of the Region 9 economy. Farming and affiliated industries such as food processing provide a significant number of agriculture and manufacturing jobs in the region. Manufacturing is the cornerstone of Spokane County's economy. Some mining and metals processing takes place in the region, but it is highly cyclical depending on a variety of market factors. Government is a major employer, especially in the smaller counties.

The Counties

Adams County¹

Adams County has an area of 1,922 square miles, making it the 14th largest county in the state.

Its population in 2000 was 16,428, ranking the county 31st out of 39 counties. The population is almost evenly split between the cities and unincorporated areas. Thirty-six percent of all county residents live in Othello, its largest city. Nearly one half of the county's residents are of Hispanic origin, up from one third in 1990. Just over eight people live every square mile, making Adams County one of the least densely populated in the state.

Bordering Adams County are Grant County to the west, Franklin County to the south, Whitman County to the east, and Lincoln County to the north.

Adams County is part of the Columbia Basin, which has rich and fertile valleys along with gentle rolling hills and grassy plains. It enjoys a generally warm, semi-arid climate and long periods of clear and sunny weather. As a result, the Columbia Basin has evolved into one of the premier agricultural centers in both the state and the nation.

Wheat is the premiere crop in the county. Wheat production began in 1880, and by 1900 became the primary industry. According to the 1997 Census of Agriculture, Adams County was the fourth largest producer of wheat in the nation. In recent years, growth in crop production has fostered development of complementary industries such as food processing, wholesale trade, and a number of agricultural services.

Agriculture is the number one employing sector in the Adams County economy, with 28 percent of all jobs (compared to 3 percent statewide). The county has a low average wage; the major reason is the heavy concentration of employment in agriculture, which is seasonal and traditionally has a relatively low wage.

Asotin County²

Asotin County has an area of 635 square miles, ranking it 34th in size among the state's counties.

Its population in 2000 was 20,551, an increase of just under 17 percent from 1990, slightly less than the state's 21 percent during the decade. More than 32 people live per square mile, making Asotin County the 20th most densely populated county.

About 40 percent of county residents live in its two cities, Asotin and Clarkston; the rest live near unincorporated communities such as Anatone, Cloverland, Rogersburg, and Grahams Landing. The county has a higher percentage of retirees than the state as a whole, as well as a lower percentage of young workers compared to the state. From 1970 to 1999, two thirds of Asotin County's growth was from people moving into the county.

The county's terrain is primarily valleys and deltas in the north and mountainous in the south. In the river valleys, the elevation is around 750 feet above sea level. The rich and fertile hills and plateaus that constitute the agricultural farmlands emerge at roughly 1,500 feet above sea level. Tributaries that include the Grande Ronde River and Asotin Creek flow through the Blue Mountains to the Snake River and slice plateaus into several fingers. The south county is rugged and more elevated as the land moves into mountainous foothills and ultimately the Blue Mountains and Umatilla National Forest. Saddle Butte, at 5,873 feet above sea level, is the county's highest point.

The State of Idaho forms Asotin County's eastern boundary. The county also borders Whitman and Garfield Counties to the north and west, and the State of Oregon to the

south. The Snake River forms Asotin County's boundary with Idaho and Whitman County.

Agriculture, trade and service sectors make up the majority of Asotin County's economy. In 1997, about two thirds of the market value of its agricultural products was crops, primarily wheat and barley, and about one third was livestock. The county has large trade and service sectors because it attractive to tourists (hunting, fishing, river rafting, jet boating, wind surfing) and retirees, and it has become a hub for retail services and health care. More than half of Asotin County's workers commute across the state line to jobs in the Lewiston, ID, area.

Columbia County³

Columbia County has an area of 868 square miles, making it one of the smallest counties in the state (31st in size).

Its population in 2000 was 4,064, ranking it 37th in the state; the population increased just 1 percent from 1990. Columbia County also is one of the most sparsely populated counties, with less than five people per square mile. Seven in ten residents live in one of the county's two cities, Dayton and Starbuck.

The terrain of northern Columbia County is one of rolling hills and valleys. In contrast, in the south are the rugged, steep and forested Blue Mountains. The county's northern border with Whitman County is the Snake River at 504 feet above sea level. The southern border is the State of Oregon, featuring Oregon Butte at 6,401 feet. The county's eastern border is Garfield County, and its western border is Walla Walla County.

Precipitation and melting snow from the Blue Mountains feed a number of rivers and streams that flow through the central Touchet Valley and into the Snake River. The principal tributaries out of the mountains are the Tucannon River, Patit Creek, and Touchet River (which branches out into the North, South, and East Forks within the county). The latter two converge on the city of Dayton in central Columbia County before moving into the Walla Walla River

Agriculture and food processing industries represent the backbone of the county's economy. Wheat, peas, and asparagus are among the county's major crops. Barges transport wheat down the Snake River to Portland, OR, where wheat is exported around the world. Manufacturing (which includes food processing) and government are the largest employers in Columbia County. Together, they accounted for almost two-thirds of the county's nonagricultural employment in 2000.

Ferry County⁴

Ferry County has an area of 2,200 square miles, making it the ninth largest county in the state.

Its population in 2000 was 7,260, an increase of more than 15 percent from 1990; its growth was only about two thirds of the state as a whole. Native Americans account for more than 18 percent of the population. Population density is just over three residents per square mile, making the county the least densely populated in the state.

Republic is the only city in Ferry County. Much of the Colville Indian Reservation is in the south county area.

The northern half of both Ferry County is dense, rugged, and mountainous terrain that makes up much of the Colville National Forest. Among its highest peaks is Sherman Creek Pass, at 5,575 feet. Interspersed throughout the high country are numerous pristine lakes. In the south, mountains give way to forested foothills and to drier hills and valleys dotted with low-lying vegetation.

Lakes and rivers significantly influence Ferry County, particularly in the southern lowlands. The boundary of Ferry County between parts of Lincoln County and Stevens County is the 150-mile long Franklin Roosevelt Lake, created by backwater from Grand Coulee Dam on the Columbia River.

Ferry County's borders are Okanogan County to the west, Lincoln County to the south, Stevens County to the east, and the Canadian province of British Columbia to the north.

Ferry County is mineral-rich, with several minerals extracted through the years including gold, silver, lead, iron, and fluorite. Agriculture is an important industry, with major crops being wheat, rye, oats, barley, and hay, as well as raising of livestock. Timber dominates the county's nonagricultural industry; however, the backbone of the area's economy is government, which employs one out of every three workers.

Garfield County⁵

Garfield County has an area of 710 square miles, 33rd in size among Washington's counties.

Its population in 2000 was 2,397, only 6.6 percent greater than in 1990. The county's growth during the 1990s was far smaller than the state's 21.1 percent. Since 1970, Garfield County's population has shrunk from about 3,200. The population fell rapidly as the Little Goose and Lower Granite dam projects on the lower Snake River were completed and workers left the area. Population density is just over three persons per square mile, making the county the second least densely populated in the state, ahead of only Ferry County.

About two thirds of the county's residents live in Pomeroy, the only city in Garfield County. The county has fewer younger workers relative to the state and a considerably larger population of older workers and retirees.

The county is bounded to the north by the Snake River and Whitman County, to the west by Columbia County, and to the east by Asotin County. Its southern boundary is with the State of Oregon.

The county's southern panhandle is rugged and densely forested, the northernmost extension of the Blue Mountains (most of which are in Oregon). The northern part of county is a rich and fertile plain that extends from the foothills of the Blue Mountains to the Snake River. At the northern boundary of the county, the Snake River has cut an enormous canyon that is 2,000 feet deep in places.

From origins in the Blue Mountains, major tributaries including Pataha Creek, Alpowa Creek, Deadman Creek, and Meadow Gulch Creek flow through Garfield County's valleys and plains before emptying into the Snake River.

Agriculture, and the production of wheat, barley and other grains, dominates the economy of Garfield County. Grain production sustains complementary industries tied to the storage and wholesale trading of grain commodities. Government plays a major role in the local economy, primarily the U.S. Army Corps of Engineers, which oversees and maintains dams and locks on the Lower Snake River, and the U.S. Forest Service, which oversees Umatilla National Forest lands in the south county area. Agriculture strongly influences the county's trade sector, the largest employment sector other than government; nearly three-quarters of all trade jobs are in wholesale trade. The county's modest retail trade and service base is concentrated near Pomeroy.

Lincoln County⁶

Lincoln County has an area of 2,310 square miles, seventh largest in the state.

Its population in 2000 was 10,184, a 15 percent increase from 1990. The county grew at about two thirds the rate of the state as a whole in the 1990s, although it grew at a faster rate in the last half of the decade. Factors behind the growth include increased job opportunities within the county and a desire by people to live in rural areas. Nearly one in every five residents is retirement age. About 55 percent of county residents live in its eight cities; Davenport is the largest.

Just over four persons live every square mile, making Lincoln County the third least densely populated county in the state, ahead of only Ferry and Garfield Counties.

Lincoln County's terrain generally is flat land and rolling hills; in the north county where it runs up against the foothills of the Kettle River Range, the terrain becomes more mountainous, reaching an elevation of 3,568 feet.

The Columbia and Spokane Rivers define Lincoln County's northern border with Ferry and Stevens Counties; Okanogan County also provides part of the county's northern boundary. Other boundary counties are Spokane County to the east, Grant County to the west, and Adams and Whitman Counties to the south.

Central and southwest Lincoln County boast a chain of 15 or so modestly sized lakes, some of which are dry. Two major tributaries, Lake Creek and Crab Creek, connect the majority of these lakes. Most of Sprague Lake is in Lincoln County; the southeastern part is in Adams County.

Since the 19th century when agriculture supplanted ranching as the area's dominant economic activity, farming has been the backbone of Lincoln County's economy. The county's major crop is wheat. According to the 1997 Census of Agriculture, Lincoln County is the second leading producer of wheat in the state and in the nation, behind only Whitman County. Nonagricultural employment has been on a sharp upswing since 1991, particularly in the services and government sectors. Government is the biggest employer in Lincoln County, with slightly less than half of all nonfarm jobs.

Pend Oreille County⁷

Pend Oreille County has an area of 1,400 square miles, making it 25th in size among Washington counties.

Its population in 2000 was 11,732, an increase of more than 31 percent since 1990; the county grew much faster than the state as a whole during the decade. The county has five cities, the largest of which is Newport. Although the Kalispel Indian Reservation is located in the county, just 4 percent of the county's population is Native American. Only eight people live every square mile, making the county the 33rd most densely populated in the state.

Much of Pend Oreille County's terrain is dense, rugged, and mountainous. Gypsy Peak, at 7,318 feet, and Abercrombie Mountain, at 7,308 feet, are the highest points in the county. Lakes and rivers significantly influence the county, with the Pend Oreille River traverses almost the entire length of the county.

Bordering Pend Oreille County is Stevens County to the west, Lincoln and Spokane Counties to the south, the State of Idaho to the east, and the Canadian province of British Columbia to the north.

The first settlers in Pend Oreille County were cattlemen, drawn by the abundance of wild hay in the Kalispel Valley. Soon thereafter logging and forest products industries got underway, as well as mining, which took off when the Pend Oreille River was enlarged for shipping in the 1930s. The county has some of the richest deposits of lead and zinc in the Northwest; it also has large quantities of limestone.

While timber, forest products, and mining continue to be important to the economy of Pend Oreille County, its largest industry in terms of employment is government. Local government, particularly K-12 education, is the largest employer.

Spokane County⁸

Spokane County has an area of 1,763 square miles, making it 19th in size among the state's counties.

Its population in 2000 was 417,939, largest of any county in eastern Washington and the fourth largest in the state. It is the eighth most densely populated county in the state, with 239 residents per square mile.

Spokane County's population grew about 16 percent during the 1990s, about three quarters as fast as the state as a whole. Nearly three of every five new residents in the decade were people moving into the county. About half the residents live in the county's 11 cities. Spokane is the largest city and the second largest in the state.

Spokane County is rectangular, except for a jagged northwest corner. Pend Oreille and Stevens Counties provides its northern boundary, Lincoln County its western boundary, Whitman County its southern boundary, and the State of Idaho its eastern boundary.

Spokane County's terrain is varied. The north county is forested and rugged as it runs up against the foothills of the Colville National Forest; Mount Spokane, the highest point in the county, at 5,878 feet, is here. The southeast county is the rich and fertile Palouse Hills. The southwest county has channeled rock outcroppings and big lakes; much of this region is part of the Turnbull National Wildlife Refuge.

The county has two major rivers. The Little Spokane River flows south from Pend Oreille County to the Spokane River in the center of the county. From Idaho, the Spokane River flows west into central Spokane County and the city of Spokane. The river turns to the northwest, joining the Little Spokane River, and eventually emptying into the Columbia River.

Spokane County is the economic hub of the area known as the Inland Northwest. It has a strong and diversified manufacturing sector, a wholesale trade and finance sector that, among its other functions, services a large agricultural community, and a strong retail trade and services sector. The city of Spokane is the retail trade and services hub, and a regional center for arts and entertainment.

The county has a vibrant manufacturing base in industries such as food and wood processing, printing and publishing, primary metals, electrical equipment and computers, and transportation equipment. The county also serves as a resource center for manufacturing sectors across the Inland Northwest through its network of financial and other business services.

Stevens County⁹

Stevens County has an area of 2,468 square miles, making it the fifth largest of the state's 39 counties.

Its population in 2000 was 40,066, nearly 30 percent larger than in 1990. It grew much faster than the state as a whole during the 1990s; it has 16 residents living per square mile, making its population density 27th in the state.

The county has six cities; Colville is the largest. The cities grew 14 percent between 1990 and 2000, while unincorporated areas grew by 35 percent. The Spokane Indian Reservation is located in south Stevens County; Native Americans are more than 7 percent of the county's population.

The northern half of Stevens County is dense, rugged, and mountainous terrain that makes up much of the Colville National Forest. Among its highest peaks are Old Dominion Mountain, 5,774 feet, and Chewelah Mountain, 5,470 feet. Interspersed throughout the high country are numerous pristine lakes. In the south, mountains give way to forested foothills and to drier hills and valleys dotted with low-lying vegetation.

Lakes and rivers significantly influence Stevens County, particularly in the southern lowlands. Part of the county's boundary with Ferry County is Franklin Roosevelt Lake on the Columbia River; the Spokane River also divides Stevens County and parts of Lincoln and Spokane Counties to the south.

Discovery of precious metals such as gold, silver and magnesite near the start of the 20th Century made Stevens County into one of the finest mineral producing areas in the state and the nation. Mining, primary and fabricated metals, and industrial machinery provide a significant portion of the county's employment. The largest industry is lumber and wood processing. Industries in the trade and services sectors provide significant employment; the largest employer in the county is government.

Whitman County¹⁰

Whitman County has an area of 2,151 square miles, ranking it as 10th largest in the state. With nearly 19 people living in every square mile, the county has a population density ranking it 25th in the state.

Its population in 2000 was 40,740, an increase of just 5 percent from 1990. Whitman County grew at a much slower rate than the state as a whole. A large university population distorts an otherwise relatively small population base; the student population at Washington State University accounts for about 40 percent of the county's population.

Most residents live in one of the county's two cities; well over half of the county's population resides in Pullman, home of WSU. Colfax is the other city.

Whitman County age group percentages are different from the state as a whole because of the presence of Washington State University. Percentage wise, the age groups of 15-19 and 20-24 are much larger than those of the state. The median age in Whitman County is 24.6 years versus 34.6 throughout the state. Since job opportunities

in the county are limited, young college students generally move to other areas upon graduation.

The county lies in the heart of the Palouse. Its terrain is a combination of flat land and rolling hills. Elevations range from 1,100 to 3,400 feet, at higher elevations are Tekoa Mountain and a number of prominent rock formations such as Bald Butte, Steptoe Butte, and Kamiak Butte.

The Snake River makes the county's winding southern border with Columbia, Asotin, and Garfield Counties. Along this border lies the Snake River Canyon, a 2,000-foot deep swath through the Palouse Hills. The county's single largest body of water is Rock Lake, located in the northwest corner. Among the county's major tributaries are the Palouse River, Rock Creek, Cottonwood Creek, Pleasant Valley Creek, and Union Flat Creek.

The county's eastern boundary is with the State of Idaho. Spokane County provides Whitman County's northern boundary, Adams and Franklin Counties the western boundary, and Columbia, Garfield, and Asotin counties the southern boundary.

Agriculture is king in Whitman County, the top producer of wheat in Washington State and the nation, according to the 1997 Census of Agriculture. The county also is the largest producer of hogs and pigs in the state, accounting for 29 percent of the inventory. Government is the largest sector of the Whitman County economy, with 62 percent of non-farm workers; Washington State University is the largest employer in the county. Relatively new and emerging industries such as high technology, light manufacturing, health services, and tourism and recreation are finding footholds in the county.

Population and Demographics

As shown in Table 1 below, Region 9's population overall grew more slowly than the state during the 1990s. Pend Oreille and Stevens Counties grew faster than the state, Adams County at about the same rate, and the rest more slowly. Through the year 2025, the region is projected to grow at about the same rate as the state, with Asotin, Pend Oreille and Stevens Counties expected to lead the region's growth.

Table 1. Population Growth

	1990 Population	2000 Population	% Change	2025 (Projected)	% Change from 2000
Adams	13,603	16,428	20.8%	22,063	34.3%
Asotin	17,605	20,551	16.7%	25,671	39.8%
Columbia	4,024	4,064	1.0%	4,092	0.7%
Ferry	6,295	7,260	15.3%	10,008	37.9%
Garfield	2,248	2,397	6.6%	2,734	14.1%
Lincoln	8,864	10,184	14.9%	12,802	25.7%
Pend Oreille	8,915	11,732	31.6%	16,662	42.0%
Spokane	361,333	417,939	15.7%	561,627	34.4%
Stevens	30,948	40,066	29.5%	64,057	59.9%
Whitman	38,775	40,740	5.0%	44,856	10.1%
Total	492,610	571,361	16.0%	764,572	33.8%
Washington State	4,866,663	5,894,121	21.1%	7,975,471	35.3%

Source: U.S. Census Bureau, Census 2000; 2002 Population Trends, State of Washington Office of Financial Management, Forecasting Division; Washington State County Population Projections For Growth Management, Intermediate Projection, State of Washington Office of Financial Management, Forecasting Division, January 2002.

Outside of Asotin, Spokane and Whitman Counties, much of Region 9's population lives outside of densely populated areas. See Table 2, below. The region's urban populations are in or near the cities of Spokane in Spokane County, Clarkston in Asotin County, and Pullman in Whitman County. Much of the region is rural, used for farming or it has rugged, timbered terrain. The current growth pattern, both urban and rural, affects how agencies prepare for emergencies as changes in the population and development can increase risks associated with hazards.

Table 2. Urban/Rural Populations, 2000

-	Urban	Rural
Adams	7,862	8,566
Asotin	19,371	1,180
Columbia	2,761	1,303
Ferry	0	7,260
Garfield	0	2,397
Lincoln	0	10,184
Pend Oreille	0	11,732
Spokane	358,719	59,220
Stevens	8,385	31,681
Whitman	27,470	13,270
Total	424,568	146,793
Percentage	67.4%	32.6%
Washington State	81.9%	18.1%

Source: U.S. Census Bureau, Census 2000: Population and Housing by Urban Classification.

The ability to prepare for and recover from a disaster varies among population groups. Research on various population groups and disasters found that it took some populations longer to recover from a disaster for a variety of reasons. These population groups include minorities, people with language barriers, the disabled, senior citizens, and those with low income.

Ethnic Groups

People from non-white population groups generally experience longer recoveries due to lower incomes, savings and insurance; their difficulty accessing insurance; and their using aid and relief organizations differently than was anticipated. Language and cultural differences can pose difficulties in some populations understanding and implementing preparedness and mitigation actions as well as accessing and using available disaster relief.

Table 3, below, shows that Region 9 overall is less diverse than the state as a whole. Adams County has a large Hispanic population, nearly half its population; a majority works in agriculture. Ferry and Stevens Counties have significant Native American populations, as they are home to the Colville Indian Reservation and the Spokane Indian Reservation, respectively. Whitman County has a growing Asian population.

The growth rate of most ethnic groups outpaced that of the white population during the 1990s.

Table 3. Population by Ethnic Group

	Hispanic/ Latino	Asian	African American	Native American	Total
Adams	47.1%	0.6%	0.3%	0.7%	48.7%
Asotin	2.0%	0.5%	0.2%	1.3%	4.0%
Columbia	6.3%	0.4%	0.2%	1.0%	7.9%
Ferry	2.8%	0.3%	0.2%	18.3%	21.6%
Garfield	2.0%	0.7%	0.0%	0.4%	3.1%
Lincoln	1.9%	0.2%	0.2%	1.6%	3.9%
Pend Oreille	2.1%	0.6%	0.1%	2.9%	5.7%
Spokane	2.8%	1.4%	1.6%	1.4%	7.2%
Stevens	1.8%	0.5%	0.3%	5.7%	8.3%
Whitman	3.0%	5.5%	1.5%	0.7%	10.7%
Washington State	7.5%	5.5%	3.2%	1.6%	17.8%

Source: U.S. Census Bureau, Census 2000.

Region 9's diversity shows in the percentage of people who do not speak English as their primary language at home and the percentage who speak English less than very well, as shown in Table 4, below.

Two of every five residents of Adams County speak a language other than English at home (primarily Spanish), and speak English less than very well. About one in 10 Whitman County residents speak a language other than English at home. This means a significant percentage of the region's population may have a language barrier that prevents them from preparing for a disaster, responding to an event, or applying for assistance after a disaster.

Table 4. Primary Language Spoken at Home

	Language Other Than English	English Less Than Very Well	Spanish	English Less Than Very Well	Other Indo- European	English Less Than Very Well	Asian- Pacific Islander	English Less Than Very Well
Adams	43.3%	22.6%	41.4%	22.1%	1.5%	0.2%	0.2%	0.1%
Asotin	3.0%	1.0%	1.6%	0.4%	1.1%	0.4%	0.2%	0.1%
Columbia	6.2%	2.7%	5.6%	2.5%	0.4%	0.2%	0.1%	-
Ferry	3.7%	0.5%	1.8%	0.4%	0.9%	0.1%	0.2%	-
Garfield	2.0%	0.5%	0.9%	0.3%	0.9%	0.1%	0.1%	0.1%
Lincoln	2.9%	0.6%	1.7%	0.4%	1.1%	0.2%	0.1%	0.1%
Pend Oreille	3.5%	0.9%	1.6%	0.2%	1.2%	0.5%	0.3%	0.2%
Spokane	6.6%	2.7%	2.0%	0.6%	3.0%	1.3%	1.4%	0.7%
Stevens	2.7%	0.8%	0.9%	0.3%	1.1%	0.4%	0.3%	0.1%
Whitman	11.0%	3.9%	3.2%	0.9%	3.0%	0.6%	4.4%	2.4%
Washington State	14.0%	6.4%	5.8%	2.8%	3.2%	1.3%	4.4%	2.2%

Source: U.S. Census Bureau, Profile of Selected Social Characteristics: 2000

Disabled People

Community preparedness activities often do not consider the needs of people with disabilities. They have complex challenges because of hearing, sight, mobility, or mental impairments. Additionally, a significant percentage of working-age people with disabilities do not work. These factors make it difficult for the disabled to prepare in advance of a disaster.

Table 5, below, shows that from 12 to 29 percent of working age people in Region 9 have a disability that does not require them to be institutionalized. About half have jobs; only Whitman County has a population of working disabled larger than the state average; the rest have a lower percentage.

Between 40 and 50 percent of retirement age people in the region have a disability.

 Table 5. Non-Institutionalized Disabled Population

	21 to 64	65 Years and Older	
	% of Population	% Employed	% of Population
Adams	21.6%	54.9%	45.5%
Asotin	20.4%	49.2%	44.2%
Columbia	22.3%	45.7%	49.8%
Ferry	23.9%	39.4%	47.1%
Garfield	14.9%	42.7%	50.3%
Lincoln	19.4%	46.0%	45.3%
Pend Oreille	29.0%	36.7%	46.6%
Spokane	18.9%	53.0%	43.2%
Stevens	21.4%	43.9%	45.8%
Whitman	11.7%	60.0%	37.9%
Washington State	17.7%	57.6%	42.3%

Source: U.S. Census Bureau, Profile of Selected Social Characteristics: 2000.

Senior Citizens

Preparedness and recovery activities may overlook senior citizens; their age could lead them to have difficulty after a disaster, perhaps not qualify for loans, or become disabled because of the disaster. Table 6, below, shows that all counties but Whitman County have a larger percentage of retirement age people than the state.

Table 6. Population Over Age 65

	% of Total Population
Adams	10.4%
Asotin	16.3%
Columbia	18.5%
Ferry	12.6%
Garfield	20.9%
Lincoln	19.0%
Pend Oreille	14.9%
Spokane	12.4%
Stevens	12.9%
Whitman	9.2%
Washington State	11.2%

Source: U.S. Census Bureau, Census 2000

Poverty

The amount of money people have influences what type of housing they live in, whether they can engage in mitigation actions, and how long it takes to recover. Income is based on a number of factors, including the individual, the economy, availability of jobs, educational opportunity, among others. Expenses can vary by location – rural places are cheaper to live but have fewer jobs, while urban areas can be costly, even for renters.

The counties of Region 9 have a greater percentage of their populations living in poverty than the state as a whole in nearly all categories, as shown of Table 7, below. While agriculture is an important part of the region's economy, many jobs in the sector pay low wages.

Table 7. Poverty Rates

	% of Total Population	Children Under 18	Over Age 65
Adams	18.2%	24.0%	8.9%
Asotin	15.4%	22.7%	6.7%
Columbia	12.6%	15.9%	11.1%
Ferry	19.0%	20.4%	10.3%
Garfield	14.2%	17.1%	10.2%
Lincoln	12.6%	17.6%	7.7%
Pend Oreille	18.1%	27.6%	6.4%
Spokane	12.3%	14.2%	8.1%
Stevens	15.9%	19.8%	11.9%
Whitman	25.6%	16.5%	5.5%
Washington State	10.6%	13.2%	7.5%

Source: U.S. Census Bureau, Profile of Selected Economic Characteristics: 2000.

School Children

While children overall are captured in figures elsewhere in this profile, the number of children attending school is a concern because many of the school buildings they spend considerable time in each day are older and potentially more vulnerable to the effects of disaster. Table 8, below, shows the population of school-age children in Region 9; it does not show the number that are in potentially vulnerable buildings.

Table 8. School Enrollment - Kindergarten through High School

	Total	Kindergarten	Elementary	High School
Adams	4,249	319	2,631	1,299
Asotin	3,900	245	2,293	1,362
Columbia	759	37	461	261
Ferry	1554	98	888	568
Garfield	496	21	299	176
Lincoln	1,980	126	1,199	655
Pend Oreille	2,413	129	1,469	815
Spokane	80,540	5,952	48,350	26,238
Stevens	8,901	569	5,258	3,074
Whitman	5,320	466	3,201	1,653
Total	110,112	7,962	66,049	36,101
Washington State	1,127,448	82,637	697,192	347,619

Source: U.S. Census Bureau, Profile of Selected Social Characteristics: 2000.

Housing

Washington's Growth Management Act encourages local jurisdictions to direct population growth into urban growth areas, where urban services can support growth and higher densities. It also requires communities to incorporate mitigation by protecting critical areas and restricting development in areas such as those that are frequently flooded or subject to geologic hazards. Eliminating or limiting development in hazard-prone areas can reduce vulnerability to hazards and the potential loss of life and injuries and property damage.

Table 9, below, provides a breakdown by county of various housing characteristics.

Table 9. Housing Development

	Single-Family	Multi-Family	Mobile Homes	Other
Adams	62.9%	13.5%	22.9%	0.6%
Asotin	70.2%	15.9%	13.0%	0.9%
Columbia	78.4%	7.6%	13.8%	0.1%
Ferry	69.4%	4.2%	24.6%	1.7%
Garfield	75.3%	5.0%	16.8%	2.8%
Lincoln	73.6%	4.2%	18.0%	4.1%
Pend Oreille	71.7%	5.1%	19.9%	3.2%
Spokane	68.9%	24.1%	6.9%	0.1%
Stevens	71.1%	5.8%	22.0%	1.1%
Whitman	52.9%	37.8%	9.1%	0.2%
Washington State	65.4%	25.6%	8.5%	0.5%

Source: U.S. Census Bureau, Profile of Selected Economic Characteristics: 2000.

The year housing was built is important for mitigation. The older a home is, the greater the risk natural disasters pose to it. Homes constructed after 1980 are more likely to withstand damage from hazards such as floods, high winds, snow loads, and earthquake because they were built with modern building codes.

Table 10, below, shows the general age of housing in Region 9; in counties where growth took place in earlier years or that are primarily rural, housing stock is older. Three of five housing units in Columbia, Garfield, and Lincoln Counties are more than 40 years old. Two of five housing units in Adams, Asotin, Pend Oreille, Spokane, and Whitman Counties are more than 40 years old.

Table 10. Housing – Year Built

	Pre-1939 – 1959	1960 – 1979	1980 – 2000
Adams	38.9%	38.6%	22.4%
Asotin	40.4%	32.0%	27.6%
Columbia	63.0%	22.5%	14.5%
Ferry	20.9%	38.0%	41.2%
Garfield	59.5%	22.5%	18.0%
Lincoln	49.1%	25.4%	25.5%
Pend Oreille	40.0%	31.4%	38.5%
Spokane	41.3%	30.7%	28.1%
Stevens	25.8%	34.5%	39.8%
Whitman	41.4%	32.7%	25.9%
Washington State	29.4%	32.7%	37.9%

Source: U.S. Census Bureau, Profile of Housing Characteristics 2000

Household Income

Median household income is an indicator of a region's economic stability. It compares economic areas as a whole, and it generally shows distribution of income among the population. Median household income indicates that point where half of all households have a higher income, and half have a lower income.

Table 11, below, shows median household income in all counties is lower than the state average. In most counties, agriculture plays an important part in the economies of all counties; farming has a significant number of part-time, seasonal and low-paying jobs.

Table 11. Median Household Income

County	Year 1999
Adams	\$33,888
Asotin	\$33,524
Columbia	\$33,500
Ferry	\$30,388
Garfield	\$33,398
Lincoln	\$35,255
Pend Oreille	\$31,677
Spokane	\$37,308
Stevens	\$34,673
Whitman	\$28,584
Washington State	\$44,776

Source: U.S. Census Bureau, Profile of Selected Economic Characteristics: 2000

Spokane County's median household income is 20th in the state. The rest of the counties are much lower, with Whitman County having the lowest median household income; the large number of students that attend Washington State University influences the county's figure. The state's median household income is highly influenced by the high-paying aerospace and high-tech jobs in Puget Sound.

Employment and Industry

Agriculture, manufacturing, trade and government are the primary sectors of the Region 9 economy. The region includes some of the top grain producing counties in the nation. Farming and affiliated industries such as food processing have a significant number of agriculture and manufacturing jobs in the region. Manufacturing is the cornerstone of Spokane County's economy; machinery, computers and peripherals, transportation equipment, and printing and publishing are among the county's major manufacturing industries. Some mining and metals processing also takes place in the region. Government also is a major employer, primarily from state-funded higher education

institutions, federal management of forests, dams and water reclamation projects, and local K-12 education.

Below are brief descriptions of the economy and employment in the region's five counties.

Adams County

Agriculture is the largest employer in Adams County. In addition, agriculture is the force behind several other industries including food processing, trucking and warehousing, and much of wholesale trade. Taken together, these industries employ more than 40 percent of the county's workers.

Twenty-eight percent of all Adams County jobs are in agriculture; this compares to only 3 percent statewide. Because of its location in the Palouse region, Adams County has climatic and soil conditions conducive to wheat farming, and wheat is the premiere crop in the county. In 1997, the county was the number three wheat producer in the state and fourth in the nation; that year the county's farms produced more than 12 percent of the state's wheat.

Manufacturing in Adams County is, for all practical purposes, food processing. Fifty percent of manufacturing jobs were in frozen fruits and vegetables in 2000, with another 40 percent in frozen specialties, and 3 percent in canned fruits and vegetables. The manufacturing sector, despite contractions in food processing, increased in size by 50 percent between 1991 and 2001. It employs one of every five non-farm workers in the county.

Forty-four percent of trade jobs in Adams County are in the wholesale sector, most of which relates to buying and selling of goods such as farm supplies, fresh fruits and vegetables, and farm and garden machinery. Most of the jobs in retail trade are in eating and drinking establishments and grocery stores. The trade sector provides nearly one in four non-farm jobs in the county.

Government also has a substantial presence in Adams County, providing more than 28 percent of non-farm jobs. Nine of 10 government jobs are in local government, with the majority at K-12 education, followed by public hospitals.

The services and construction and mining sectors are much smaller than in other counties. Services provides about 15 percent of non-farm jobs, about one third of which are in health care. The construction sector provides three percent of such jobs.

Asotin County

In 1998, there were more than twice as many Asotin County residents employed than there were jobs within the county. The bulk of the labor force works outside the county. According to the 2000 Census, 55 percent of the county's workforce commuted to jobs

outside the county; 4,500 drove to Lewiston, ID, to work, while another 240 drove to Whitman County.

Agriculture is one of the major sectors of the Asotin County economy. According to the 1997 Census of Agriculture, the total market value of agricultural products was two-thirds crops, mostly wheat and barley, and one-third livestock (mostly cattle and calves). Other farm products important in the county include oats, hay, cattle and calves, hogs and pigs, and sheep and lambs.

The services sector provided 30 percent of non-farm employment in 1999. Expansion in health services, social services, lodging, and amusement and recreation services drove growth in this sector in recent years. The largest industry in this sector is health services. The Clarkston, WA – Lewiston, ID area has become a hub for medical services. Tourism also plays a greater role in the economy than before, as the number of visitors to the area requiring overnight accommodations is increasing.

The trade sector in Asotin County is quite large relative to the size of the sector throughout the state for two reasons: the county attracts many tourists, a factor that does not necessarily occur in nearby counties, and many more workers reside in the county (but most commute to Lewiston). Trade provides 29 percent of all non-farm employment in the county. The largest industry in retail is eating and drinking establishments. Lewiston and Clarkston provide the retail hub for a 100-mile radius, drawing shoppers from Washington, Idaho and Oregon.

Government provides 20 percent of jobs in 1999; more than three of every four public sector jobs is at the local level, primarily K-12 education.

One of the drawbacks of Asotin County's economy is the lack of a strong manufacturing base; it provides 6 percent of jobs in the county, less than half the state average. Most manufacturers employ only a handful of workers. The largest manufacturing employers are in lumber and wood products, with the second largest transportation equipment, most involved in the manufacture of small aluminum boats.

Columbia County

Manufacturing, food processing included, and government are the largest employers in Columbia County. Together, these two accounted for almost two-thirds of the county's nonagricultural employment in 2000.

The agricultural sector is a significant one in Columbia County. In 2000, this sector employed 11.6 percent of the county's workers. Based on the 1999-2000 Washington Agricultural Statistics, the county's farms ranked eighth in wheat production statewide and fifth in barley production. Grain production and food processing are the county's primary industries. Peas, asparagus, and tree fruit also are important crops.

Columbia County's manufacturing sector traditionally provides from one-quarter to one-third of the county's non-farm jobs. Food processing, particularly asparagus canning,

provides the majority of employment. Aside from government, manufacturing is the largest employment sector in the county.

Government is the largest employer in the county, and it showed greater growth during the 1980s and 1990s than any other industry sector. Government provides more than one of every four non-farm jobs, most of which are in local government, primarily in K-12 education.

The bulks of workers in wholesale trade are involved with purveying farm equipment and supplies. Eating and drinking establishments and grocery stores dominate employment in retail trade.

Ferry, Pend Oreille, Stevens Counties

(Note: The Washington Department of Employment Security economic profile from which this information was derived did not provide separate discussions of each county's economy; therefore, the narrative below describes the three counties' economies as a whole.)

The backbone of the three counties' economy is government. Government employs nearly three of every 10 workers in the region; three-quarters of the jobs are at the local level, primarily in K-12 education. The government sector has grown much faster in the Tri-Counties than in the state since 1970, although employment in government is at its lowest level since 1992.

Except for government, services is the largest economic sector in the area. It employs more than one out of five workers in the region, and since the end of the last national recession in 1991, it has had remarkably robust growth, averaging almost 10 percent annually. In 2000, the sector accounted for 23 percent of the region's non-farm work force. The largest of these industries, health care, includes workers in private hospitals, nursing facilities, the offices of physicians and dentists.

The manufacturing sector in the Tri-Counties, although it has grown slowly in recent years, remains a major employer and a vital part of the economy. About 19 percent of non-farm employment is concentrated in this sector, primarily within the lumber and wood processing industry.

The lumber and wood processing industry accounts for half the jobs in this sector. In Stevens County, it is the largest industry, but there also is significant employment in primary and fabricated metals and industrial machinery. In Pend Oreille County, lumber and wood processing is the second largest manufacturing industry after paper mills. Almost 90 percent of Ferry County's manufacturing sector employment comes from this industry.

Trade is another substantial sector in the local economy. It employs 19 percent of the area's non-farm workers, and its growth rate over the 30 years consistently has been greater than the statewide average. Ferry County has had the most growth in trade,

increasing its employment by 500 percent since 1970. Pend Oreille County grew by 187 percent and Stevens County by 219 percent during the same period. More than one-third of retail trade was employment in eating and drinking places.

Because it has a significant mining industry, employment in the construction and mining sector in Ferry County is higher than in Pend Oreille and Stevens Counties. Ferry County is mineral-rich; gold, silver, lead, iron, and fluorite have all been mined in the county, and there are known deposits of zinc, tungsten, pyrite, dolomite, limestone, and silica sand. For the Tri-Counties as a whole, the sector accounted for 5 percent of non-farm employment: statewide, the share is about 6 percent.

Agriculture is important, though quite small, with just 2 percent of the region's jobs. The bulk of employment is in crop production; major crops are wheat, rye, oats, barley, and hay. The hay is cut for livestock, another of the area's agricultural industries.

Garfield County

Agriculture dominates the economy of Garfield County. Farm income in 1998 was 50 percent of all personal income, compared to only 3 percent statewide. Agriculture means, for the most part, barley and wheat production. In 1997, Garfield County was the fourth largest producer of wheat in the state, the 39th largest in the nation. In addition, the county's farms grow canola, hay, grass seed, and livestock, mainly cattle and calves, but also sheep, lambs, hogs and pigs.

Agriculture supports more than one-quarter of all wage and salary workers in the county, far greater than the 3 percent share employed in agriculture statewide.

Government is the largest employer in Garfield County, providing 56 percent of jobs, with strong representation at the federal and local levels. The federal presence stems from the U.S. Army Corps of Engineers, which operates the Lower Snake River dams, and the U.S. Forest Service, which oversees the Umatilla National Forest. Local government is primarily K-12 education, and county and municipal functions.

Trade is the largest employment sector other than government, but agriculture strongly influences it. Nearly three-quarters of all trade jobs are on the wholesale side, with the bulk of employment concentrated in farm machinery and supplies sales and grain brokerage. Retail trade, with one-quarter of all trade employment, is concentrated in restaurants and grocery stores.

Lincoln County

Since the 19th century when agriculture supplanted ranching as the area's dominant economic activity, farming has been the backbone of Lincoln County's economy. Even after substantial growth in the services and trade sectors during the 1990s, the source of the county's wealth remains the farm.

Nonagricultural employment has been on a sharp upswing since 1991. In the 1990s, major gains in employment came from the services and government sectors; both created enough new jobs to overcome declines or stagnation in other industry sectors.

Agriculture provides 11 percent of all jobs in Lincoln County. In 1997, it was the number two producer of wheat in the state and nation, and the number two producer of barley in the state, third in the nation; its farmers grew 15 percent of the state's wheat and 24 percent of its barley. Oats and potatoes also are major crops, and the county is a large producer of beef cattle.

While agriculture is the force behind the economy, the biggest provider of jobs in Lincoln County is government. The public sector provides slightly less than half of all non-farm jobs. The bulk of government jobs are at the local level, 88 percent, with most involved with K-12 education and health care. Most federal jobs are associated with either the postal service or the Grand Coulee Dam National Recreation Area, while most state government employees are involved with transportation.

Trade provides 24 percent of jobs in the county, with four in 10 jobs in wholesale trade. The two largest components of the industry are crop sales and farm supplies (i.e., fertilizers, seed.) The remaining trade jobs are in retail, many of which are in eating and drinking establishments.

Services is the fastest growing sector of Lincoln County's economy, with 18 percent of employment. Typically, services sector industries are small, diverse, and employ only a few workers. The exception is the Twin Rivers Casino, the largest private employer in the county.

In the late 1990s, manufacturing employment amounted to about 3 percent of all jobs. The primary manufacturing industries are canvas products, logging, and printing and publishing.

Spokane County

Spokane County is the capital of the so-called Inland Northwest area on the east side of Washington. As the major metropolitan area in Region 9, it is the retail trade and services hub for much of region. This role extends from health care to business and finance, to manufacturing, services and beyond.

The county is as a major source of services for important agricultural activities in the region. The county has a vibrant manufacturing base, and it serves as a resource center for manufacturing sectors across the Inland Northwest through its network of financial and other business services.

The manufacturing sector is the cornerstone of Spokane County's economy. Although it is located far from major markets, the county has developed into more than a regional hub. The sector produces goods for local, regional, national, and international markets. Major employers in the area produce aluminum, machinery, computer and peripherals,

transportation equipment (including engines, boats, trailers, and aircraft), and are involved with printing and publishing. This sector provides more than 11 percent of all non-farm jobs in the county.

The services sector employs three in 10 of the non-farm workers, and is the fastest growing sector in the county. Health care services is the largest industry in the services sector, with nearly four of every 10 jobs. Business services is another significant industry in the sector.

Trade provides one of every four non-farm jobs. Retail trade provides 19 percent of all employment in the county, with eating and drinking establishments and food stores leading the number of jobs. Until 1989, the trade sector was the largest employer in Spokane County. Since then, it is second to the services sector.

Government has an important, but smaller than state average, presence in Spokane County. It provides more than 16 percent of non-farm jobs. The Air Force has a significant presence at Fairchild Air Force Base near Spokane. The bulk of state employment is at higher education facilities – Eastern Washington University in Cheney and two community colleges in Spokane. As in all other counties, most of local government employment is in K-12 education.

Agriculture and construction and mining sectors make up about 6 percent of the county's economy.

Whitman County

Agriculture is king in Whitman County. So, too, is Washington State University, the single largest employer. The university provides stable employment that pays relatively high wages. Relatively new and emerging industries such as high technology, light manufacturing, health services, and tourism and recreation are finding footholds in the county's economy.

Agriculture is an important sector of Whitman County's economy. Although the sector provides only about 3 percent of the jobs, the county is the premier wheat and barley producer in the state and in nation. In 1997, the county was the top wheat and barley producer in both the state and in the nation. That year, the county's farmers grew 21 percent of the state's wheat and 37 percent of the state's barley. In addition, the county is a top producer of hogs, pigs, sheep and lambs in Washington, and it is an important producer of field crops such as peas and grass seeds.

Government is by far the largest industry in Whitman County, with the largest payroll and employing the most people, 62 percent of non-farm workers. Because of Washington State University, state government is the largest component of government, with 70 percent of public employment and 36 percent of all jobs in the county. And, 97 percent of state government employment is at the university.

After government, trade is the largest employing sector. In 1998, the sector employed 18 percent of the county's non-farm work force. About three of every 10 jobs in the sector are in wholesale trade, a higher percentage than the state. This is reflective of wholesale trade activities occurring in an agricultural area – for example, brokers selling crops at the wholesale level, and farmers purchasing machinery and supplies. The remaining 70 percent of jobs in this sector are in retail trade; almost half of all retail employment is in eating and drinking places.

Services is the fastest growing economic sector in Whitman County. Health services is the largest services industry; its 1997 employment level was more than double that of social services, the next largest. Other services industries with significant employment are social services, hotels and lodging places, and engineering and accounting services.

Since 1970, services jobs more than doubled, and trade employment grew by more than three-fourths; government, the largest sector, increased 56 percent.

Manufacturing accounts for only a bit more than 2 percent of the county's non-farm jobs. The sector has numerous small businesses with few employees; production of electrical measuring instruments is the dominant industry.

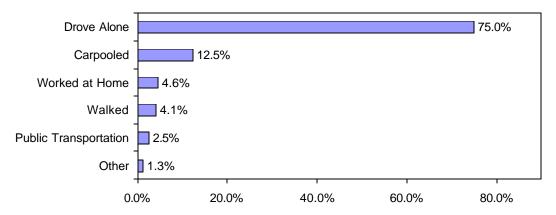
Commuting Patterns^{11, 12}

Recent population growth has resulted in a significant increase in workers, automobiles and trucks on the roads. A higher percentage of workers driving alone can cause traffic congestion and accidents. More traffic places a larger load on the region's transportation infrastructure. The impact of an emergency can disrupt automobile traffic, shut down transit systems, and make evacuations more difficult.

Several counties in Region 9 have significant populations of commuters. Asotin County has the most commuters – 55 percent of its workers commute to jobs in other counties; more than 4,500 commute to the Lewiston, ID area, and another 240 to Whitman County. The three northeastern-most counties – Ferry, Pend Oreille, and Stevens – send more than 5,000 workers to jobs elsewhere, primarily Spokane County.

Figure 1, below, shows transportation used by commuters. Primary mode of transportation is driving alone. Public transportation systems carried about 9.3 million passengers in Garfield, Spokane and Whitman Counties in 2001. Vanpools carried another 85,500 passengers in Spokane County.

Figure 1. Commuting Patterns



Source: U.S. Census Bureau, Profile of Selected Economic Characteristics: 2000

Hazards and State Facilities Potentially At-Risk

The regional hazard profiles were developed using information from the individual hazard profiles that are part of the Risk Assessment, as well as from reference documents listed at the end of each hazard profile.

Unless otherwise noted below, at-risk facilities were identified by state agencies participating in this plan using methodology identified in the Risk Assessment Introduction, Tab 7.

Figures for the number of staff/visitors/residents for each at risk facility were calculated on the highest use for that facility; for many structures, this inflates the number of individuals in the buildings at any one time.

The Washington Department of Transportation identified essential transportation corridors, or highways and ferry routes of greatest importance to transportation of people and goods and services.

Hazard: Avalanche

Characteristics	Most Vulnerable Areas	Event History	Probability
Avalanches occur when a layer of snow loses its grip on a slope and slides downhill. They occur frequently in the mountain backcountry, often without any impact to people, transportation routes or development. Most avalanches that cause injuries or deaths occur outside developed recreation areas; the primary cause of these avalanches is the weight of the victim or someone in the victim's party on the slab of snow. Very few avalanche fatalities occur in on open runs in ski areas or on highways. Avalanche season begins in November and runs through early summer for all mountain areas of the state.	 Recreation areas in the Selkirk Mountains. Recretation areas in the Blue Mountains State Route 129 south of Anatone. 	No reports available on avalanches that have taken place in Region 9.	On average, avalanches kill one to two people every year in Washington State.

Hazard: Avalanche	Hazard: Avalanche At Risk Population:		PRELIMINA	RY ASSESSMENT
	State Agency Structures At Risk umber and Function of Buildings	No. of Affected Staff / Visitors / Residents	Approx. Value of Owned Structures	Approx. Value of Contents All Buildings
Total at-risk buildings: One state highway, no buildings		0	0	0
·	Idings: One state highway is potentially at risk to average 29 south of Anatone. This highway is vulnerable to		onditions.	
Total at-risk critical fa	cilities: No buildings.	0	0	0

Hazard: Drought

Characteristics	Principal Sources	Event History	Probability
Drought is a prolonged period of dryness severe enough to reduce soil moisture, water and snow levels below the minimum necessary for sustaining plant, animal, and economic systems. Drought can have a widespread impact on the environment and the economy, depending upon its severity, although it typically does not result in loss of life or damage to property, as do other natural disasters. In Region 9, drought conditions can reduce water available for irrigated crops and domestic and industrial use, as well as affect the availability and cost of power for local industries.	Drought is the result of many causes, often synergistic in nature; these include global weather patterns that produce persistent, upper-level high-pressure systems along the West Coast with warm, dry air resulting in less precipitation.	During 1895-1995, much of the state was in severe or extreme drought at least 5 percent of the time. Region 9 was in severe or extreme drought from 10 to 15 percent of the time during this period. 1977 Drought – This region experienced severe or extreme drought conditions from 30 percent to 40 percent of the time during this event. 2001 Drought – At the height of the event in this region in August 2001, much of this region experienced moderate drought conditions.	In temperate regions of the world, including Washington state, current long-range forecasts of drought have limited reliability. Meteorologists do not believe that reliable forecasts are attainable any more than a season in advance. Drought conditions of at least moderate severity occur every few years in Washington. On a long-term basis, Region 9 experiences drought conditions of at least moderate severity from 10 to 15 percent of the time.

Hazard: Drought	At Risk Population: Unknown of 571,361		PRELIMINARY ASSESSMENT		
	State Agency Structures At Risk Number and Function of Buildings	No. of Affected Staff / Visitors / Residents	Approx. Value of Owned Structures	Approx. Value of Contents All Buildings	
Total at-risk buildir	ngs: State Agency identified – 137 (86 owned, 51 leased)	4,275	\$249,007,901	\$88,210,892	

<u>Function of at-risk buildings</u>: Included are facilities that potentially could be affected by the secondary impacts of drought (water and electricity shortages, etc.):

- Campus of Eastern State Hospital for mentally disabled adults.
- About 50 facilities serving individuals and families on public assistance, providing employment and training services, driver licensing, and liquor sales.

Total at-risk critical facilities: State Agency identified – 65 (owned-leased	2,657	\$177,000,000	\$60,945,000
split not available)			

<u>Function of at-risk critical facilities</u>: Facilities that are potentially could be affected by the secondary impacts of drought (water and electricity shortages, etc.) include buildings on the campus Eastern State Hospital for mentally disabled adults.

Hazard: Earthquake

Characteristics	Principal Sources	Event History	Probability
Areas in Region 9 are found in: Floodplains and the adjacent bluffs in the Columbia, Palouse, Pend Oreille, Sanpoli, Snake, Spokane, Tucannon River valleys because of their high or medium susceptibility to liquefaction and other ground failures. Bluffs along shorelines of large lakes such as Lake	 Interplate earthquake in the offshore Cascadia Subduction Zone. Evidence of quakes with magnitude greater than 8 have been found along the Washington coast; the most recent event was about 1700. Shallow, crustal earthquake in the North America (continental) plate. Information is limited on surface faults in Region 9. Deep, Benioff zone earthquake within the Juan de Fuca plate. This is the source for the 1949, 1965, and 2001earthquakes. 	Since 1970, earthquakes of magnitude 4.0 or greater whose epicenter was in Region 9 occurred in 1973 (M4.4), 1979 (M4.3), 1991 (M4.3), 1992 (M4.1), and 2001 (M4.0). 2001 – Residents of Spokane County strongly felt a swarm of earthquakes, the largest of which was magnitude 4.0.	Approximate recurrence rate for a magnitude 9 earthquake in the Cascadia Subduction Zone is once every 350 to 500 years. Approximate recurrence rate for earthquakes similar to the 1965 magnitude 6.5 Seattle-Tacoma and 2001 magnitude 6.8 Nisqually events is once every 35 years. Approximate recurrence rate for earthquakes similar to the 1949 magnitude 7.1 Olympia event is once every 110 years. Geologists have uncovered evidence of surface faults in Eastern Washington, but have not yet determined how often they generate earthquakes, their magnitude, and the risk they pose to the public.

Hazard: Earthquake	At Risk Population: Unkn	own of 571,361	PRELIMINARY ASSESSMENT		
•	tructures At Risk action of Buildings	No. of Affected Staff / Visitors / Residents	Approx. Value of Owned Structures	Approx. Value of Contents All Buildings	
Total at-risk buildings: State Agency	Identified - 137 (98 owned, 39 leased)	3,204	\$242,230,717	\$86,872,099	

Function of at-risk buildings: Identified are:

- Campus of Eastern State Hospital for mentally disabled adults.
- Campus of Lakeland Village for developmentally disabled adults.
- Regional headquarters, local detachments, highway weigh scales, crime lab, and communication facilities of the Washington State Patrol.
- About 20 general office and client services facilities serving individuals and families on public assistance, providing employment and training services, driver licensing, and liquor sales.

Six state highways considered emphasis corridors because of their importance to movement of people and freight are potentially at risk to earthquake:

1	Interstate	90

Total at-risk critical facilities: State Agency identified – 77 (owned-leased	2,176	\$185,810,790	\$58,752,663
split not available)			

Function of at-risk critical facilities: Identified are:

- Buildings on the campuses of Eastern State Hospital for mentally disabled adults and Lakeland Village for developmentally disabled adults.
- Regional headquarters, local detachments, highway weigh scales, crime lab, and communication facilities of the Washington State Patrol.
- General office and client services facilities.

Six state highways considered emphasis corridors because of their importance to movement of people and freight are potentially at risk to earthquake:

1. Interstate 90

2. U.S. Highway 2

3. U.S. Highway 12

4. U.S. Highway 395

5. State Route 17

6. State Route 20

Hazard: Flood

Characteristics	Principal Flood Sources	Event History	Probability
Region 9 is subject flooding that occurs on the region's major river systems (see right) as well as flash flooding. Because of their origins in upper elevations, these rivers are influenced by snow and rain patterns in the Selkirk and Blue Mountains, as well as thunderstorms that cause flash flooding on both frozen and dry ground. Primary flood season is during spring runoff in May and June, although riverine floods can occur during winter months. Flash flooding can occur throughout the year.	 Columbia River Palouse River Pend Oreille River Sanpoli River Snake River Spokane River Tucannon River 	Flooding in Region 9 is a common event. Since 1956, flooding resulted in Presidential Disaster Declarations in 1963, 1964, 1971, 1972, 1974, 1977, 1996, 1997, and 1998. Since 1989, more than \$11.7 million in Stafford Act disaster assistance has been provided to Region 9 for repairs to public facilities following flood events. Largest recipients of assistance are Columbia County, \$4.7 million, Ferry County, \$1.7 million, and Whitman County, \$1.5 million; the rest of the counties received less than \$1 million each.	The region's major rivers typically flood every two to five years. Since 1956, this region has experienced serious flooding resulting in major damage and a Presidential Disaster Declaration about every five years. More than 3 percent of Pend Oreille County is in the 100-year floodplain; other counties with between 2 and 3 percent of their area in the 100-year floodplain are Adams, Lincoln, Spokane and Whitman Counties.

At Risk Population: est. 96,536 of 571,361

PRELIMINARY ASSESSMENT

	State Agency Stro Number and Funct		No. of Affected Staff / Visitors / Residents	App	rox. Value of Owned Structures	Approx. Value of Contents All Buildings
Total a availat		entified - 16 (owned-leased split not	332		\$5,189,261	\$3,072,404
providi	ng employment and training serv	are general office and client services faices, driver licensing, and liquor sales. s corridors because of their importance	Č		·	ssistance,
	they cross or run through floodpl	ains:	•	- p. o a	a neight are potentially	at risk to flood
	they cross or run through floodpl Interstate 90	ains: 2. U.S. Highway 2	·	3.	U.S. Highway 12	at risk to flood
			·			at risk to flood

Function of at-risk critical facilities: General office and client services facilities.

Six state highways considered emphasis corridors because of their importance to movement of people and freight are potentially at risk to flood where they cross or run through floodplains:

 1. Interstate 90
 2. U.S. Highway 2
 3. U.S. Highway 12

 4. U.S. Highway 395
 5. State Route 17
 6. State Route 20

Hazard: Flood

Hazard: Landslide		

Characteristics	Principal Sources	Event History	Probability
Region 9 is part of two landslide provinces. Columbia Plateau province — This landslide province has extensive layers of sediments between, intermingling with, and overlaying basalt flows. Landslides in this province include slope failures in bedrock and landslides in overlying sediments. Irrigation compounds the province's landslide problems. Okanogan Highlands province — This landslide province extends from the slopes of the North Cascades in the west to the Selkirk Mountains in the northeast corner of the state. Primary slope stability problems in this province are in the sediments within and along the boundary of the highlands.	 Bluffs along shorelines of river valleys and large lakes. Slopes of the Selkirk range. Slopes of the Blue Mountains 	Following the opening of Grand Coulee Dam, landslides generated tsunamis on Lake Roosevelt from 1994 through 1953. Among the largest slides: April 8, 1944 – A four to five million cubic yard landslide from Reed Terrace generated a 30-foot wave that crossed the lake. July 27, 1949 - A two to three million cubic yard landslide near the mouth of Hawk Creek created a 65-foot wave observed 20 miles away. April 10-13, 1952 – A 15 million cubic yard landslide below the Kettle Falls Bridge created a 65- foot wave that crossed the lake. April to August 1953 – Landslides in Reed Terrace caused at least 11 waves; the largest, 65 feet high, was observed six miles away. 1996 – The highest concentration of landslides in the February Storms and Landslides Disaster were at the northwest edge of the Blue Mountains. Areas affected were the Mill Creek, Blue Creek, Touchet, Tucannon, and Walla Walla drainages. Similar occurrences took place in 1931 and 1964.	Ground failures that result in landslides have a number of contributing factors that do not allow for the development of a reasonable estimate probability of future events. Factors that contribute to ground failure and landslides include: Local topography. Erosion on slopes. Saturation of slopes. Earthquakes. Volcanic deposits and debris flows. Excess weight on weak slopes. Human action that disturbs slopes.

Hazard: Landslide	At Risk Population: Unknown	own of 571,361		PRELIMINA	RY ASSESSMENT
-	y Structures At Risk Function of Buildings	No. of Affected Staff / Visitors / Residents	App	orox. Value of Owned Structures	Approx. Value of Contents All Buildings
Total at-risk buildings: State Ager	ncy identified – 54 (45 owned, nine leased)	976		\$75,308,514	\$59,187,047
<u>Function of at-risk buildings</u> : Ident services facilities.	ified are the campus of Lakeland Village for	developmentally disa	abled a	adults and general office	e and client
Six state highways considered em landslide as they cross steep slop	phasis corridors because of their importance	e to movement of peo	ople a	nd freight are potentially	at risk to
1. Interstate 90	2. U.S. Highway 2		3.	U.S. Highway 12	
4. U.S. Highway 395	5. State Route 17		6.	State Route 20	
Total at-risk critical facilities: State	e Agency identified – 30 (all owned)	683		\$45,000,000	\$42,000,000
Function of at-risk critical facilities	: Buildings on the campus of Lakeland Villa	ge for developmenta	lly disa	abled adults.	
Six state highways considered em landslide as they cross steep slop	phasis corridors because of their importance	e to movement of peo	ople aı	nd freight are potentially	at risk to
1. Interstate 90	2. U.S. Highway 2		3.	U.S. Highway 12	
4. U.S. Highway 395	5. State Route 17		6.	State Route 20	

Hazard: Severe Storm

Characteristics	Principal Sources	Event History	Probability
A severe storm is an atmospheric disturbance that results in one or more of the following phenomena: strong winds and large hail, thunderstorms, tornados, rain, snow, or other mixed precipitation. Most storms move into Washington from the Pacific Ocean. Typically, major impacts from a severe storm are to transportation and loss of utilities.	 High winds Winter storm Blizzard Dust storm Severe thunderstorm Tornado 	Severe storm in Region 9 is a common event. Since 1956, severe storm events resulted in Presidential Disaster Declarations in 1974, 1975, 1977, 1990 (two disasters), 1995, and 1996. Since 1989, Region 9 received more than \$16.6 million in Stafford Act disaster assistance for repairs to public facilities following severe storm events. Spokane County received about two-thirds of the assistance, with Columbia County (\$2.3 million), Pend Oreille County (\$1 million), and Whitman County (\$1.2 million) the other recipients of more than \$1 million in assistance.	Projected recurrence rates for the severe storm events to which Region 9 is most vulnerable are as follows: High wind events occur at least once a year in Garfield County. Winter storms occur about once every two years in Garfield and Spokane Counties. Blizzards occur in the higher elevations of most counties; a recurrence rate is not available. Dust Storms occur at a rate of about once every five years to about once every 20 years in the region. Severe Thunderstorms occur regularly, from once every four years in Asotin County, to nearly once every year in Spokane County. Tornados occur less frequently, from about once every 20 years in Columbia and Whitman Counties to about once every three years in Spokane County.

Hazard: Severe Storm At Risk Population: Unknown of 571,361 PRELIMINARY ASSESSMENT

State Agency Structures At Risk Number and Function of Buildings	No. of Affected Staff / Visitors / Residents	Approx. Value of Owned Structures	Approx. Value of Contents All Buildings
<u>Total at-risk buildings</u> : State Agency identified – 164 (102 owned, 62 leased)	4,002	\$256,290,049	\$88,944,167

Function of at-risk buildings: Identified are:

- 7. Campus of Eastern State Hospital for mentally disabled adults.
- 8. Campus of Lakeland Village for developmentally disabled adults.
- 9. Regional headquarters, local detachments, highway weigh scales, crime lab, and communication facilities of the Washington State Patrol.
- 10. About 40 general office and client services facilities serving individuals and families on public assistance, providing employment and training services, driver licensing, and liquor sales.

Total at-risk critical facilities: State Agency identified – 54 (owned-leased	2,299	\$185,810,790	\$60,220,663
split not available)			

Function of at-risk critical facilities: Identified are:

- 11. Buildings on the campuses of Eastern State Hospital for mentally disabled adults and Lakeland Village for developmentally disabled adults.
- 12. About a half-dozen general office and client services facilities serving individuals and families on public assistance, providing employment and training services, driver licensing, and facilities of the Washington State Patrol.

Hazard: Tsunami

Characteristics

A tsunami resembles a series of quickly rising tides that withdraw with currents much like those of a river. Swift currents commonly cause most of the damage. A Pacific Ocean tsunami can affect the entire Pacific basin, while a tsunami in inland waters can affect many miles of shoreline.

Tsunamis typically cause the most severe damage and casualties near their source. Waves are highest there because they have not yet lost much energy.

Another class of damaging water wave is a seiche. A seiche is a wave generated in a body of water from the passage of seismic waves caused by earthquakes. Sedimentary basins beneath the body of water can amplify a seismic seiche and the natural sloshing action in a body of water or focus water waves onto a section of shoreline.

Principal Sources

Tsunamis and seiches can be generated by a number of sources:

- Distant earthquakes along the Pacific Rim (i.e., 1964 Alaska earthquake).
- Local earthquakes, such as those generated by local surface faults; in the Benioff zone; or in the Cascadia Subduction Zone off the coast.
- Large landslides into bodies of water, such as Lake Roosevelt.
- Submarine landslides in bodies of water.

Event History

1944 to 1953 – Massive landslides into Lake Roosevelt generated a number of tsunamis on the lake. The largest include:

April 8, 1944 – A 30-foot wave generated by a landslide from Reed Terrace struck the opposite shore of the lake

July 27, 1949 – A 65-foot wave crossed the lake about 35 miles above Grand Coulee Dam; the wave was observed 20 miles away.

April 10 – 13, 1952 – A 65-foot wave struck the opposite shore of the lake three miles below the Kettle Falls Bridge.

October 13, 1952 – A tsunami broke tugboats and barges loose from their moorings at the Lafferty Transportation Company six miles from its source.

April – August 1953 – Landslides in Reed Terrace caused tsunamis in the lake at least 11 different times. The largest to hit the opposite shore was 65 feet high and observed six miles away. Velocity of one of the waves was about 45 miles per hour.

Probability

Geologists have uncovered evidence of a number of surface faults in Eastern Washington, but have not yet determined how often they generate earthquakes, their magnitude, and whether they could generate a tsunami or seiche in an enclosed body of water in Region 9.

Ground failures that result in landslides have a number of contributing factors that do not allow for the development of a reasonable estimate probability of future major landslide events that generate tsunamis.

Approximate recurrence rate for a magnitude 9 earthquake in the Cascadia Subduction Zone is once every 350 to 500 years.

Approximate recurrence rate for the quakes similar to the 1965 magnitude 6.5 Seattle-Tacoma and 2001 magnitude 6.8 Nisqually quake is once every 35 years.

Approximate recurrence rate for the 1949 magnitude 7.1 Olympia earthquake is once every 110 years.

Hazard: Tsunami	zard: Tsunami At Risk Population: Unknown of 571,361 PRELII		PRELIMINA	MINARY ASSESSMENT	
	State Agency Structures At Risk Number and Function of Buildings	No. of Affected Staff / Visitors / Residents	Approx. Value of Owned Structures	Approx. Value of Contents All Buildings	
Total at-risk buildi	ngs: No state buildings.	0	0	0	
Total at-risk critica	al facilities: No state buildings.				

Hazard: Volcano

Characteristics	Volcanoes in Region	Event History	Probability
Volcanoes can lie dormant for centuries between eruptions. When Cascades volcanoes do erupt, high-speed avalanches of hot ash and rock called pyroclastic flows, lava flows, and landslides can devastate areas 10 or more miles away, while huge mudflows of volcanic ash and debris called lahars can inundate valleys more than 50 miles downstream. Falling ash from explosive eruptions can disrupt human activities hundreds of miles downwind, and drifting clouds of fine ash can cause severe damage to the engines of jet aircraft hundreds or thousands of miles away.	None.	Of all of Washington's volcanoes, Mount St. Helens is the largest producer of ash. Its May 18, 1980 eruption covered much of Region 9 in ash, posing temporary but major problems for transportation and for sewage-disposal and water-treatment systems. Due to reduced visibility, many highways and roads closed to traffic; Interstate 90 from Seattle to Spokane closed for a week. Thick ash accumulation also destroyed crops.	Due to prevailing westerly winds, the possibility of an annual ash fall of one centimeter in Region 9 from any major Cascade volcano ranges from 1 in 1,000 to 1 in 5,000, depending on location.
Region 9 can be affected by ash fall from the state's five volcanoes.			

Hazard: Volcano	At Risk Population:	sk Population: Unknown of 571,361 PRELIM		INARY ASSESSMENT	
	State Agency Structures At Risk Number and Function of Buildings	No. of Affected Staff / Visitors / Residents	Approx. Value of Owned Structures	Approx. Value of Contents All Buildings	
Total at-risk building	s: State Agency identified – 2 (both leased)	88	0	\$6,632,380	
Function of at-risk b	buildings: General office and client services at risk to	ash fall.			
Total at-risk critical	facilities: 0	0	0	0	

Hazard: Wildland Fire

Characteristics

Wildland fires are fires caused
by nature or humans that result in
the uncontrolled destruction of
forests, brush, field crops,

grasslands, and real and personal

property in non-urban areas.

A fire needs three elements in the right combination to start and grow – a heat source, fuel, and oxygen. How a fire behaves primarily depends on the characteristics of available fuel, weather conditions, and terrain.

The wildland fire season in Washington usually begins in early July and typically culminates in late September with a moisture event. Drought, snow pack, and local weather conditions can expand the length of the fire season.

Principal Sources

- Humans people start most wildland fires; from 1992 to 2001, people, on average, caused more than 500 wildland fires each year on stateprotected lands. Humancaused fires burn an average of 4,404 state-protected acres each year.
- Lightning lightning on average started 135 wildland fires annually on stateprotected lands during 1992-2001. Lightning-caused fires burn more state-protected acreage than any other cause, an average of 10,866 acres annually.

Event History

Some of the state's most significant wildland fires occurred in this region:

1910 – Of the 3 million acres burned by the Great Idaho fire, 150,000 acres were in Pend Oreille and Spokane Counties.

1987 – The Hangman Hills fire in Spokane County burned 1,500 acres, destroyed 24 homes and killed two people.

1991 – Firestorm 1991 burned 35,000 acres in Ferry, Lincoln, Pend Oreille, Spokane, Stevens and Whitman Counties. The 92 fires destroyed 114 homes and 40 other buildings, damaged 250-300 buildings, and caused one death.

Among the significant fires on state protected land 1992-2001:

1996 – Bowie Lake fire, Spokane County, 3,020 acres, destroyed eight homes.

1997 – Red Lake Fire, Stevens County, 1,151 acres, burned five homes.

2001 – North Coppei Fire, Columbia County, burned 4,810 acres.

Probability

Nearly all of the state's significant wildland fires have occurred in Eastern Washington.

Eastern Washington is more prone to catastrophic wildland fires than Western Washington – the east has both lighter fuels that burn more easily and more snags and hazard trees, and weather conditions more favorable to fire (thunderstorms with dry lightning are more prevalent in the east).

Also, the east has a longer fire season than the western half of the state – the west receives more rainfall, has wetter and cooler spring seasons, and is more urbanized.

Hazard: Wildland Fire At Risk Population: Unknown of 571,361 PRELIMINARY ASSESSMENT

State Agency Structures At Risk Number and Function of Buildings	No. of Affected Staff / Visitors / Residents	Approx. Value of Owned Structures	Approx. Value of Contents All Buildings
Total at-risk buildings: State Agency identified – 160 (102 owned, 58 leased)	4,849	\$254,995,517	\$995,376,577

<u>Function of at-risk buildings</u>: Identified are:

- 13. Campus of Eastern State Hospital for mentally disabled adults.
- 14. Campus of Lakeland Village for developmentally disabled adults.
- 15. Regional headquarters, local detachments, highway weigh scales, crime lab, and communication facilities of the Washington State Patrol.
- 16. About 36 general office and client services facilities serving individuals and families on public assistance, providing employment and training services, driver licensing, and liquor sales.

Total at-risk critical facilities:	State Agency identified – 81 (owned-leased	3,181	\$182,936,772	\$13,522,869
split not available)				

Function of at-risk critical facilities: Identified are:

- 17. Buildings on the campuses of Eastern State Hospital for mentally disabled adults and Lakeland Village for developmentally disabled adults.
- 18. About 20 general office and client services facilities serving individuals and families on public assistance, providing employment and training services, driver licensing, and facilities of the Washington State Patrol.

Region 9 Profile

¹ Adams and Grant County Profile, Washington Department of Employment Security, Labor Market and Economic Analysis Branch, December 2002.

² Asotin County Profile, Washington Department of Employment Security, Labor Market and Economic Analysis Branch, September 2000.

³ Columbia County Profile, Washington Department of Employment Security, Labor Market and Economic Analysis Branch, September 2002.

⁴ Ferry, Stevens and Pend Oreille County Profile, Washington Department of Employment Security, Labor Market and Economic Analysis Branch, February 2002.

⁵ Garfield County Profile, Washington Department of Employment Security, Labor Market and Economic Analysis Branch, September 2000.

⁶ Lincoln County Profile, Washington Department of Employment Security, Labor Market and Economic Analysis Branch, July 1999.

⁷ Ferry, Stevens and Pend Oreille County Profile, Washington Department of Employment Security, Labor Market and Economic Analysis Branch, February 2002.

⁸ Spokane County Profile, Washington Department of Employment Security, Labor Market and Economic Analysis Branch, January 2001.

⁹ Ferry, Stevens and Pend Oreille County Profile, Washington Department of Employment Security, Labor Market and Economic Analysis Branch, February 2002.

¹⁰ Whitman County Profile, Washington Department of Employment Security, Labor Market and Economic Analysis Branch, June 1999.

¹¹ Profile of Selected Economic Characteristics: Census 2000, U.S. Census Bureau.

¹² Summary of Public Transportation 2001, Washington State Department of Transportation, November 2002 (Revised April 2003).